

Amendments to the Specification:

Please replace the paragraph at page 10, from line 8 through line 18, with the following paragraph:

~~--Figure 2A is an illustration of a profile microarray substrate according to one embodiment of the invention, comprising a first location for placing a tissue sample and a second location comprising a microarray. Each sublocation on the microarray represents a different stage of breast cancer. Figure 2AB shows an microarray locator according to one embodiment of the invention next to a profile microarray substrate, for determining the coordinates of different sublocations on the microarray. Figure 2BC shows six different sublocations from the microarray of the present invention shown in Figure 2A. Each sublocation represents different stages of breast cancer stained with a CK7 antibody. Figure 2D shows a profile microarray substrate comprising a test tissue at a first location and a microarray at a second location. The test tissue is stained with a breast cancer specific antibody. Figure 2CD shows information provided in a kit which comprises the profile microarray substrate of the present invention shown in Figure 2A and the microarray locator shown in Figure 2AB.--~~

Please replace the paragraph at page 10, from line 22 through line 28, with the following paragraph:

~~--Figures 4A-4BC show an interface on a display of a user device connectable to a network which displays information relating to the biological characteristics of tissues at different sublocations in a tissue microarray. Figure 4A shows an interface for addressing a breast cancer microarray and for inputting new information relating to the tissue samples in the microarray into a database. Figure 4B shows a display of a portion of the database. Figure 4BC shows a display on the interface of the device which displays relationships identified between medical data and molecular profiles obtained for tissue samples on the tissue microarray.--~~

Please replace the paragraph at page 20, from line 11 through line 17, with the following paragraph:

~~--As shown in Figure 1B, microarrays 13 according to the invention comprise a plurality of sublocations 13s, each sublocation comprising a tissue sample having at least one known biological characteristic (e.g., such as tissue type). In one embodiment, the tissue sample at at least one sublocation 13s has morphological features substantially intact which can be at least viewed under a microscope to distinguish subcellular features (e.g., such as a nucleus, an intact cell membrane, organelles, and/or other cytological features), i.e., the tissue is not lysed (see Figure 2BC and Figure 3, for example).--~~

Please replace the paragraph at page 21, line 20 through page 22, line 2, with the following paragraph:

--In another embodiment of the invention, ~~shown in Figures 2A and 2D~~, the substrate 43 is a "profile array substrate" designed to accommodate a control tissue microarray and a test tissue or cell sample for comparison with the control tissue microarray. In this embodiment, the substrate 43 comprises a first location 43a and a second location 43b. The first location 43a is for placing a test tissue sample, while the second sublocation 43b comprises the microarray 13. This profile microarray substrate 43 allows testing of a test tissue sample to be done simultaneously with the testing of tissue samples on the microarray 13 having at least one known biological characteristic allowing for a side by side comparison of biological characteristics expressed in the test sample with the characteristics of the tissues in the microarray 13. Profile microarray substrates 43 are disclosed in U.S. Provisional Application Serial No. 60/234,493, filed September 22, 2000, the entirety of which is incorporated by reference herein.--

Please replace the paragraph at page 22, from line 10 through line 21, with the following paragraph:

--In one embodiment, a microarray locator 45 is provided to enable the user to easily determine the coordinates of a sublocation 13s of interest on the microarray 13. The microarray locator 45 is a template having a plurality of shapes 45s, each shape 45s corresponding to the shape of each sublocation 13s in the microarray 13, and maintaining the same relationships as each sublocation 13s on the microarray 13 (see Figure 2A~~B~~, for example). The microarray locator 45 is itself marked by coordinates 46, allowing the user identify the coordinates of sublocation(s) 13s on the microarray 13 by overlaying the microarray locator 45 on top of the microarray 13 and aligning the shapes 45s on the template with the sublocations 13s on the microarray 13. In one embodiment of the invention, the microarray locator 45 is a transparent sheet (e.g., plastic, acetate, and the like). In another embodiment of the invention, the microarray locator 45 is a sheet comprising a plurality of holes, each hole corresponding in shape and location to each sublocation 13s on the microarray 13.--

Please replace the paragraph at page 49, from line 8 through line 22, with the following paragraph:

--It should be obvious to those of skill in the art that the exact arrangement of coordinate links 35 is not critical and can be modified, and that such modifications are encompassed within the scope of the invention. For, example, in one embodiment, the interface 6 comprises a field for entering coordinates on the tissue microarray 13 identified by the user (e.g., for example by using an microarray locator 45, such as the one shown in Figure 2A~~B~~). STEP 4 can therefore include providing a microarray locator 45 to overlay a tissue microarray 13 allowing the user to identify a coordinate of interest (e.g., the location, on an x, y coordinate system, of a sublocation 13s within a microarray

13 expressing biological characteristics of interest). In another embodiment, the tissue microarray 13 includes at least one orientation position (e.g., a tissue location stained or stainable with a "control reactive "molecule" (e.g., antibody, enzyme, dye, nucleic acid, and the like)) for orienting and manually determining coordinates on the tissue microarray 13, and STEP 4 includes the step(s) of identifying the orientation positions on the microarray 13. In still further embodiments, a substrate 43 comprising a microarray 13 being analyzed comprises encoded addressing information which is received by a receiver 48 in communication with the system 1 (see, Figure 8, for example).--

Please replace the paragraph at page 52, from line 2 through line 6, with the following paragraph:

--New information can be used to generate or refine molecular profiles. Such molecular profiles can be displayed on yet another interface 6 (see, for example, Figure 4B). In one embodiment of the invention, a plurality of microarrays are assayed, serially, or in parallel, and the results from this analysis are evaluated by using the relationship determining function of the IMS 7.--

Amendments to the Drawings:

The attached 3 sheets of drawings include changes to Figures 2B, 2C, 2E, 3 and 4C:

Sheet 1, which includes revised Figures 2A, 2B, and 2C, replaces the sheet that includes original Figures 2A-2E.

Sheet 2, which includes revised Figure 3, replaces the sheet that includes original Figure 3.

Sheet 3 shows deleted figure 4B.

Sheet 4, which includes revised Figures 4C, replaces the sheet that includes original Figures 4C.

Attachment: 4 replacement sheets with amendments indicated in red ink; 3 clean sheets which reflect the above-identified amendments.